Notice No.6

Rules and Regulations for the Classification of Special Service Craft July 2016

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: June 2017

Amendments to	Effective date	Mandatory Instrument
Part 3, Chapter 2, Section 4	1 July 2017	NA
Part 3, Chapter 5, Sections 6 & 8	1 July 2017	NA
Part 3, Chapter 6, Sections 2 & 4	1 July 2017	X
Part 5, Chapter 2, Section 5	Corrigendum	NA
Part 8, Chapter 3, Section 1	1 July 2017	NA

Part 3, Chapter 2
Craft Design

■ *Section 4*
Bulkhead arrangements

~~**4.9 Cofferdams**~~

~~4.9.1 Tanks carrying fuel oil or lubricating oil are to be separated by cofferdams from those carrying feed water, fresh water, edible oil or similar oils. Similarly tanks carrying vegetable or similar oils are to be separated by cofferdams from those carrying fresh or feed water. Cofferdams are to be fitted between freshwater tanks and black or grey water tanks.~~

~~4.9.2 Lubricating oil tanks are also to be separated by cofferdams from those carrying fuel oil. However, such cofferdams need not be fitted provided that:~~
~~(a) Common boundaries of lubricating oil and fuel oil tanks have full penetration welds.~~
~~(b) The tanks are arranged such that the fuel oil tanks are not generally subjected to a head of oil in excess of that in the adjacent lubricating oil tanks.~~

~~4.9.3 Cofferdams are not required between fuel oil double bottom tanks and deep tanks above, provided that the inner bottom plating is not subjected to a head of fuel oil.~~

~~4.9.4 Where fitted, cofferdams are to be suitably ventilated.~~

~~4.9.5 If fuel oil tanks are necessarily located within or adjacent to the machinery spaces, their arrangement is to be such as to avoid direct exposure of the bottom from rising heat resulting from an engine room fire. *See Pt 17 Fire Protection, Detection and Extinction* as applicable.~~

~~4.9.6 In passenger craft, water ballast is, in general, not to be carried in tanks intended for fuel oil. Attention is drawn to the Statutory Regulations issued by National Authorities in connection with the *International Convention for the Prevention of Pollution of the Sea by Oil, 1973/78*.~~

4.9 Separation and protection of tanks

4.9.1 Where the cross contamination of liquid consumables stored in adjacent tanks could be hazardous to machinery, these tanks are to be separated by cofferdams. Hazardous pairings of liquid consumables include but are not limited to the following:
(a) Fuel oil and lubricating oil.
(b) Fuel oil and technical water (e.g. feedwater).
(c) Lubricating oil and technical water.

4.9.2 Tanks carrying liquids for the purposes of fire-fighting (e.g. foam concentrate) are to be separated by cofferdams from adjacent tanks containing liquid fuels.

4.9.3 Tanks carrying fresh water for human consumption (potable water) are to be separated by cofferdams from adjacent tanks containing liquid substances harmful to human health. Fresh water for other purposes and water ballast are not considered harmful.

4.9.4 Where a cofferdam as specified in *Pt 3, Ch 2, 4.9 Separation and protection of tanks 4.9.1* is impracticable, special consideration may be given, subject to the arrangements complying with the following:
(a) In metal construction the common boundary plates shall have full penetration welds.
(b) In composite construction, an adequate barrier of lining or coating of resistant material is required between the fluid and the laminate. The resin for the composite construction is to be compatible with the content of the tank. The core material for sandwich construction is to be end grain balsa or closed cell PVC foam. With balsa core, gaps between each block are to be filled with resin. If any part of a stiffener runs through the tank, then that part of the stiffener core is to be isolated using resin filled buffers, or equivalent, outside of the tank boundaries. Details are to be submitted for appraisal.

4.9.5 Where a corner to corner situation occurs, tanks are not considered to be adjacent, but any welds near the corner joining the continuous plate are to be full penetration welds.

4.9.6 Where fitted, cofferdams are to be suitably ventilated, provided with a suitable drainage arrangement, and be of sufficient size to allow proper inspection, maintenance and safe evacuation.

4.9.7 If fuel oil tanks are necessarily located within or adjacent to the machinery spaces, their arrangement is to be such as to avoid direct exposure of the bottom from rising heat resulting from a machinery or hazardous space fire. In addition SOLAS Regulation II-2/B4.2.2.3.2, where applicable, shall be adhered to. Alternative standards consistent with SOLAS Regulation II-2/B4.2.2.3.2 can be applied.

4.9.8 Attention is drawn to the Flag Administration requirements concerning separation and protection of tanks.

Part 3, Chapter 5
Anchoring and Mooring Equipment

■ *Section 6*
Anchor cable

6.7 Cable stopping and release arrangements

6.7.1 It is recommended that suitable bow chain stoppers be provided. Where cables pass through stoppers, these stoppers are to be manufactured from ductile material and be designed to minimise the possibility of damage to, or snagging of, the cable. They are to be capable of withstanding without permanent deformation a load equal to 80 per cent of the Rule breaking load of the cable passing over them. The corresponding stresses induced in the supporting structure are not to exceed the allowable values given in *Table 5.6.3 Allowable stresses in windlass and chain stopper supporting structure*.

Table 5.6.3 Allowable stresses in windlass and chain stopper supporting structure

	Permissible stress N/mm^2
Normal stress (*see* Note 1)	$1,00\ \sigma_0$
Shear stress	$0,58\ \sigma_0$
Symbols	
σ_0 = specified minimum yield stress, N/mm^2	
Note 1 Normal stress is defined as the sum of bending and axial stresses.	

■ *Section 8*
Windlass design and testing

8.2 Windlass design

(*Part only shown*)

8.2.1 The following performance criteria are to be used as a design basis for the windlass:

(d) Where a chain stopper is fitted, the windlass braking system is to have sufficient brake capacity to ensure safe stopping when paying out the anchor and chain. It is the Master's responsibility to ensure that the chain stopper is in use when riding at anchor. At clearly visible locations on the bridge and adjacent to the windlass control position, the following notice is to be displayed adjacent to the windlass control position, and at clearly visible locations on the bridge if the windlass can be operated remotely:

'The brake is rated to permit controlled descent of the anchor and chain only. The chain stopper is to be used at all times whilst riding at anchor.'

It is recommended that the windlass, with its braking system in action and in conditions simulating those likely to occur in service, is to be able to withstand, without permanent deformation or brake slip, a load, applied to the cable, given by:

$K_b d_c^2(44 - 0{,}08 d_c)$ N

where

K_b = 4,41 for Cable Grade U1,
= 6,18 for Cable Grade U2,
= 8,83 for Cable Grade U3.

The performance criteria are to be verified by means of shop tests in the case of windlasses manufactured on an individual basis. Windlasses manufactured under LR's Type Approval Scheme for Marine Engineering Equipment will not require shop testing on an individual basis.

Table 5.8.1 Design load cases for the windlass

Load case	Condition	Note
1	Continuous pull	*See Pt 3, Ch 5, 8.2 Windlass design 8.2.1(a)*
2	Overload pull	*See Pt 3, Ch 5, 8.2 Windlass design 8.2.1(b)*
3	Brake holding load	*See Pt 3, Ch 5, 8.2 Windlass design 8.2.1(c) and Pt 3, Ch 5, 8.2 Windlass design 8.2.1(d)*

8.8 Seatings

8.8.1 The windlass is to be efficiently bedded and secured to the deck. The thickness of the deck in way of the windlass is to be increased, ~~and adequate stiffening is to be provided, to the Surveyor's satisfaction.~~ and the supporting structure for the anchor windlass to be examined for the brake holding loads specified by *Table 5.8.1 Design load cases for the windlass*. The allowable stresses specified in *Table 5.6.3 Allowable stress in windlass and chain stopper supporting structure* are to be used to derive the net scantlings of the supporting structure. The structural design integrity of the bedplate is the responsibility of the Builder and windlass manufacturer.

Part 3, Chapter 6
Passenger and Crew Accommodation Comfort

■ *Section 2*
Noise

2.2 Passenger accommodation and public spaces

Table 6.2.2 Yachts – Maximum noise levels in dB(A)

Location		Acceptance Numeral		
		1	2	3
Passenger cabins:	Standard	53	55	58
	Superior	50	53	55
Lounges		55	58	60
Open deck recreation areas:	2nd deck from WL	72	75	79
	3rd deck from WL	63	66	70
Wheelhouse		60	62	75

~~**Note** *1.* The levels may be exceeded by 5dB(A) within 3 m of a ventilation inlet/outlet or machinery intake/uptake on open decks.~~

Note ~~*2*~~ *1.* The levels may be exceeded by 3 dB(A) in accommodation above the propellers for three decks above the mooring deck.

Note ~~*3*~~ *2.* The levels for open deck recreation areas refer to ship generated noise only. On open deck spaces the noise generated from the effects of wind and waves can be considered separately to limits agreed between the Builder and Owner and advised to LR for the trial conditions.

2.3 Crew accommodation and work areas

Table 6.2.4 Crew accommodation – Maximum noise levels in dB(A)

Location	Acceptance Numeral			
	1	2	3	
			Ships <10,000 grt	Ships ≥ 10,000 grt
Sleeping cabins, hospitals	50	53	60	55
Offices, conference rooms and day cabins	55	58	65	60
Mess rooms, lounges, reception areas and recreation rooms				
within accommodation	55	58	65	60
Recreational areas on open deck	67	72	75	75
Alleyways, changing rooms, bathrooms, lockers	70	75	75	75
~~**Note** The levels may be exceeded by 5dB(A) within 3 m of a ventilation inlet/outlet or machinery intake/uptake on open decks.~~				

■ *Section 4*
Testing

4.2 Test conditions

(*Part only shown*)

4.2.4 The test conditions required for the vibration and noise measurements are to be in accordance with the following conditions:

(i) For ~~passenger~~ all ships, intermittently run equipment such as transverse propulsion units are to be operated at ~~60~~ 40 per cent of their rated power for additional measurements in surrounding ship areas.

Part 5, Chapter 2
Local Design Loads

■ *Section 5*
Impact loads

5.2 Impact pressure for non-displacement mode

5.2.3 The side shell impact pressure due to slamming is to be taken as:

$$P_{dls} = P_{dlb} \frac{\mathrm{Tan}(40 - \theta_B)}{\mathrm{Tan}(\theta s - 40)} \text{ kN/m}^2$$

but is not to be taken as greater than P_{dlb}

where = mean deadrise angle of bottom plating, in degrees at local section,
θ_B

θ_S = mean deadrise angle of side plating, in degrees at local section,

$(40 - \theta_B)$ is not to be taken as less than 10°
$(\theta_S - 40)$ is not to be taken as less than 10°
P_{dls} is to be taken as constant from the chine or operating waterline to a point half G_o from the chine, or the weather deck if this is reached first. Multiple chines will be subject to special consideration based on the above principle. *See Figure 2.5.1 Angles used in determination of side shell pressure for planing craft, P_{dls}*.

Part 8, Chapter 3
Scantling Determination for Mono-Hull Craft

■ *Section 1*
General

1.29 Web stability

1.29.1 ~~Primary members of `top-hat' or single plate laminate construction type section are to be supported by tripping brackets at, in general, four for top hat and alternate frame spacings for plate, of secondary stiffening members respectively.~~ The stability of composite beams, girders, stringers etc. is to be analysed with respect to global buckling due to compressive loads. The flanges and webs shall be analysed with respect to local buckling due to compressive and shear loads. Design calculations are to be submitted indicating the margin against failure.

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